WE CLAIM:

1. A method for generating a transgenic soybean plant which comprises in its genome a heterologous nucleic acid sequence of interest, comprising:

(a) introducing into a soybean somatic embryo a polynucleotide encoding a functional dihydrodipicolinate synthase (DHPS) polypeptide, operably linked to a first expression control sequence, wherein DHPS expressed from the introduced DHPS-encoding polynucleotide is effective to render the embryo resistant to S-2-aminoethylcysteine (2-AEC), and

(b) contacting the embryo with 2-AEC under conditions inhibiting growth of a non-resistant embryo but permitting an embryo which expresses the DHPS to grow selectably and mature into a soybean plant.

2. The method of claim 1, further comprising introducing a polynucleotide encoding a polypeptide of interest, operably linked to a second expression control sequence wherein the first and second polynucleotides and their expression control sequences may be the same or different.

3. The method of claim 1, wherein the DHPS-encoding polynucleotide and/or the polypeptide of interest-encoding polynucleotide are stably integrated into the genome.

4. The method of claim 1, wherein the polynucleotide encoding the DHPS polypeptide and the polynucleotide encoding the polypeptide of interest are on the same molecule.

5. The method of claim 1, wherein the polynucleotide encoding the DHPS polypeptide, operably linked to the first expression control sequence, and the

polynucleotide encoding the polypeptide of interest, operably linked to the second expression control sequence, are on separate molecules.

6. The method of claim 1, wherein the first expression control sequence is a constitutive promoter.

7. The method of claim 6, wherein the first expression control sequence comprises a cauliflower mosaic virus CaMV 35S promoter or a ribosomal RNA promoter.

8. The method of claim 2, wherein the second expression control sequence is a seed-specific promoter.

9. The method of claim 8, wherein the second expression control sequence comprises a glycinin, phaseolin, conglycinin, seed lectin, napin, zein or other seed-specific promoter.

10. The method of claim 2, wherein the sequence encoding the functional DHPS polypeptide is upstream of the sequence encoding the polypeptide of interest.

11. The method of claim 2, wherein the sequence encoding the functional DHPS polypeptide is downstream of the sequence encoding the polypeptide of interest.

12. The method of claim 2, wherein the heterologous polypeptide of interest is omega-3 desaturase; a polypeptide for improved amino acid compositions; a polypeptide imparting resistance to a bacterium, a fungus, a virus, an insect, or a nematode; a herbicide resistance polypeptide; a polypeptide affecting soybean composition or quality; a nutrient utilization polypeptide; an environmental or stress resistance polypeptide; and/or a drought resistance polypeptide.

13. The method of claim 2, wherein the polypeptide is phosphinothricin acetyltransferase, glyphosate resistant EPSPS, aminoglycoside phosphotransferase, dalapon dehalogenase, bromoxynil resistant nitrilase, anthranilate synthase and glyphosate oxidoreductase.

14. The method of claim 2, wherein the polypeptide of interest is a lysophosphatidate acyl transferase (LPAT).

15. The method of claim 2, wherein the polypeptide of interest is a diacylglycerol acyltransferase (DGAT).

16. The method of claim 2, wherein the polypeptide of interest provides increased oil content in the soybean.

17. The method of claim 2, wherein the polypeptide of interest is delta-9 desaturase.

18. The method of claim 17, wherein expression of the delta-9 desaturase activity results in a decreased saturated fatty acid contents in the soybean plant.

19. The method of claim 18, wherein the decreased fatty acid content results in palmitoleic acid accumulation in the soybean plant.

20. The method of claim 2, wherein the polypeptide of interest is delta-12 desaturase.

21. The method of claim 20, wherein expression of the delta-12 desaturase results in high oleic acid content soybean oil.

22. The method of claim 21, wherein the polypeptide of interest is a functional DHPS expressible in soybean plant and seed.

23. The method of claim 22, wherein the polypeptide of interest is the same as the DHPS-encoding sequence.

24. The method of claim 1, wherein the DHPS-encoding sequence encodes a bacterial DHPS that is resistant to AEC inhibition.

25. The method of claim 1, wherein the DHPS-encoding sequence is isolated from an organism selected from the group consisting of *Corynebacterium glutamicum, Escherichia coli and Nicotiana sylvestris.*

26. The method of claim 25, wherein the DHPS-encoding compirses the coding sequence represented by SEQ ID NO: 2.

27. The method of claim 1, wherein the DHPS-encoding sequence has been genetically altered to become resistant to AEC inhibition.

28. The method of claim 1, wherein the DHPS-encoding sequence is isolated from soybean and has been genetically altered to be resistant to AEC inhibition.

29. The method of claim 28, wherein the DHPS-encoding sequence comprises the sequence represented by SEQ ID NO: 1.

30. The method of claim 1, wherein a 3' terminator sequence is located 3' to the DHPS-encoding sequence.

31. The method of claim 30, wherein the 3' terminator sequence is a pea RUBISCO 3' controlling sequence, a ribosomal RNA terminator, or a 3' transcription region for the nopaline synthase (NOS) gene.

32. The method of claim 2, wherein one or both of the sequence encoding the functional DHPS polypeptide and the sequence encoding the heterologous

polypeptide of interest is operably linked to two or more expression control sequences.

33. The method of claim 2, wherein the transgenic soybean plant is backcrossed so as to generate a transgenic soybean plant which is homozygous for the sequence encoding the heterologous polypeptide of interest.

34. The method of claim 1, further comprising backcrossing the transgenic soybean plant to generate a transgenic soybean plant which is homozygous for the sequence encoding the DHPS polypeptide.

35. The method of claim 1, wherein the transgenic plant is fertile.

36. The method of claim 1, further comprising propagating in a bacterium a plasmid comprising the DHPS-encoding sequence, the expression control sequence, and a polynucleotide encoding a selectable or screenable marker for bacterial culture, operably linked to an expression control sequence.

37. The method of claim 36, wherein the marker for bacterial culture is an nptII gene, a bla gene, a nptI gene, a dhfr gene, an aphIV gene, an aacC3 gene, an aacC4 gene or a GUS gene.

38. The method of claim 36, wherein the polynucleotide encoding a marker for bacterial culture is the DHPS encoding sequence and the culture is an AEC-sensitive E. coli auxotroph.

39. The method of claim 36 wherein the polynucleotide encoding a marker for bacterial culture imparts antibiotic resistance, and further comprising cleaving the antibiotic resistance polynucleotide from the plasmid prior to introducing the plasmid sequences into the somatic soybean embryos.

40. The method of claim 39, further comprising cleaving the antibiotic resistance polypeptide from the DHPS-encoding sequence portion of the plasmid by action of a restriction enzyme.

41. The method of claim 1, wherein the embryo is contacted with a concentration of AEC from about 0.1 to about 20 mM.

42. The method of claim 1, wherein the embryo is contacted with a concentration of AEC from about 1 to about 2.5 mM.

43. The method of claim 1, wherein the transgenic soybean plant contains increased levels of lysine compared to soybean plants which do not comprise the DHPS encoding sequences.

44. A method for generating a herbicide-resistant transgenic soybean plant comprising:

introducing into a soybean somatic embryogenic culture a polynucleotide encoding a functional dihydrodipicolinate synthase (DHPS) polypeptide, operably linked to an expression control sequence, wherein DHPS expressed from the introduced DHPS-encoding polynucleotide is effective to render an embryo resistant to selection-effective amounts of S-2-aminoethylcysteine (2-AEC), and to render the plant resistant to herbicide-effective amounts of AEC, and

contacting the embryo with selection effective amounts of 2-AEC.

45. The method of claim 41, wherein the DHPS-encoding sequence encodes a bacterial DHPS that is resistant to AEC inhibition.

46. The method of claim 41, wherein the DHPS-encoding sequence is isolated from soybean and has been genetically altered to be resistant to AEC inhibition.

47. The method of claim 41, wherein the DHPS encoding sequence comprises the sequence represented by SEQ. ID. NO: 1.

48. A herbicide-resistant transgenic soybean plant, or progeny thereof, comprising a polynucleotide encoding a functional dihydrodipicolinate synthase (DHPS) polypeptide, operably linked to an expression control sequence, wherein DHPS expressed from the introduced DHPS-encoding polynucleotide is effective to render the soybean plant resistant to herbicide-effective amounts of AEC, the plant having no antibiotic resistance marker.

49. A soybean somatic embryo comprising an AEC resistant DHPS-encoding polynucleotide selected by the process of claim 1.

50. A transgenic soybean plant which is free of a polynucleotide encoding a polypeptide imparting antibiotic resistance selected by the process of claim 1.

51. A transformation vector comprising

a polynucleotide, operably linked to an expression control sequence, encoding an AEC resistant DHPS and expressible in soybean somatic embryos,

a polynucleotide, operably linked to an expression control sequence, encoding a polypeptide of interest producing a desired trait upon expression in a soybean plant, and

a polynucleotide imparting a trait selectable in bacterial culture, the vector having no antibiotic resistance marker.

52. The vector of claim 51, comprising a constitutive promoter.

53. The vector of claim 51, wherein the polynucleotide imparting a selectable trait is the DHPS-encoding sequence and the bacterial culture is an AEC-sensitive *E. coli* auxotroph.

54. A transgenic soybean plant comprising a polynucleotide encoding an AEC resistant DHPS that is expressible in soybean somatic embryos and a polynucleotide encoding a protein imparting a desired trait in the soybean plant or soybean, the plant being free of a polynucleotide encoding a polypeptide imparting antibiotic resistance.

55. A soybean seed produced by the soybean plant of claim 51.

56. The plant of claim 54, wherein the polypeptide imparting a desired trait is a lysophosphatidate acyl transferase (LPAT) or diacylglycerol acyltransferase (DGAT).

57. The plant of claim 54, wherein the plant produces a soybean having increased oil content.

58. The plant of claim 54, wherein the polypeptide imparting a desired trait is a delta-9 desaturase and/or a delta-12-desaturase.

59. The plant of claim 54, wherein the delta-9 desaturase decreases saturated fatty acid contents in the soybean plant and/or results in palmitoleic acid accumulation in the soybean plant and/or high oleic acid soybean oil.

60. The plant of claim 54, wherein the polypeptide of interest is one or more selected from the group consisting of omega-3 desaturase, a polypeptide for improved meal amino acid compositions, a disease resistance polypeptide, an insect

resistance polypeptide, a nematode resistance polypeptide, a herbicide resistance polypeptide, a polypeptide affecting soybean composition or quality, a nutrient utilization polypeptide, an environmental or stress resistance polypeptide and a drought resistance polypeptide, and combinations.

61. The plant of claim 54, wherein the DHPS is a bacterial DHPS that is resistant to AEC inhibition.

62. The plant of claim 61, wherein the AEC resistant DHPS gene is obtained from a bacterium selected from *Corynebacterium glutamicum* and *E. coli.*

63. The plant of claim 54, wherein the DHPS gene is derived from soybean and is genetically altered to be resistant to AEC inhibition.

64. The plant of claim 54, wherein the protein imparting the desired trait in the plant or bean is the DHPS.